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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
LEITH, PATRICIA A	

ART UNIT	PAPER NUMBER
1655	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/774,092	BROVELLI ET AL.	
	Examiner	Art Unit	
	Patricia Leith	1655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 February 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3,6,7 and 23-26* is/are pending in the application.

4a) Of the above claim(s) *26* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3,6,7 and 23-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

A Pre-Appeal Brief meeting was held on this case whereby a decision was made to re-open prosecution.

The Pre-Appeal Brief panel agreed with Applicants' arguments concerning the rejection of claims 3, 6-7 and 23-25 under 35 USC 112 First paragraph. Said rejection is herein removed.

The Pre-Appeal Brief panel indicated that the rejection placed over claims 23 and 25 was inadvertently omitted from the previous Office action. Said rejection is re-placed herein. Further, a specific motivation for claim 6 is lacking and thus a proper motivation for this claim is set-forth herein.

The Pre-Appeal Brief panel did not find the Applicants' arguments persuasive with regard to the outstanding 35 USC 103(a) rejections (save for the fact that the rejections over claims 23 and 25 were not properly rejected as the rejection over these claims was inadvertently omitted and save for the rejection of claim 6 - whereby the Examiner has instituted a new rejection over this claim).

Claims 3, 6-7 and 23-26 are pending in this application.

Claim 26 remains withdrawn from examination on the merits as being directed toward a non-elected invention as established in the previous Office action.

Claims 3, 6-7 and 23-25 were examined on their merits.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3, 7 and 24 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Gahler et al. (US 6,511,683) in view of Letchamo et al. FACTORS AFFECTING ECHINACEA QUALITY; ASHS Press, Alexandria, VA (2002), Seidler – Lozykowska et al. (2003), Dou et al. (2001 – Abstract) and Rininger et al. (2000) .

Gahler et al. . (US 6,511,683) recognized the advantage of standardizing extracts of Echinacea for several desired endogenous compounds such as chicoric acid, alkylamides and polysaccharides (see entire patent and Abstract):

> [I]t is desirable to formulate Echinacea compositions to contain standardized amounts of biologically active components derived from Echinacea plants. Such standardized, Echinacea compositions provide the consumer with a consistent, effective dose of one or more, biologically active, Echinacea components. In particular, there is a strong commercial market for Echinacea extracts containing a high concentration of one or more, biologically active, Echinacea components believed to promote good health. Such highly enriched extracts can be used directly as dietary supplements, or can be blended with other Echinacea extracts to prepare dietary supplements containing standardized amounts of biologically active, Echinacea components. (col. 1, lines 23-37)

Gahler et al. clearly established the desirability of standardizing Echinacea for several markers in order to produce extracts with added medicinal benefit (see column 1):

> Scientific studies indicate that Echinacea-derived polysaccharides, alkylamides and chicoric acid (a caffeic acid derivative also known as chicoric acid, 2,3-o-di-caffeoyl-tartaric acid) each possess health-promoting properties. For example, alkylamides from Echinacea have been shown to stimulate phagocytosis in mice granulocytes at concentrations of about 0.1 parts per million (ppm). Bauer, R. et al., Arzneim.-Forsch./Drug Research, 38: 276-281 (1988). Similarly, chicoric acid has been shown to increase phagocytosis in granulocytes, and may stimulate the immune system at concentrations as low as 0.01 ppm. See e.g., A. Awang et al., supra. Echinacea polysaccharides have been shown to inhibit hyaluronidase, increase phagocytosis, induce the release of interferon-6, and enhance resistance to C. albicans infection in mice. See, e.g., A. Awang et al., supra; Wagner, H, et al. Arzneim.-Forsch./Drug Research, 35: 1069-1075 (1985).
>
> (7) Numerous factors must be considered and optimized in order to produce Echinacea extracts having a high concentration of polysaccharides, alkylamides and/or chicoric acid. For example, the amounts of polysaccharides, alkylamides and chicoric acid in Echinacea plants are influenced by the species of the plant, the age of the plant and the plant growth conditions. Additionally, the solvents and process parameters, such as temperature and length of extraction period, utilized to extract polysaccharides, alkylamides and chicoric acid from Echinacea plants can greatly affect the yield of these components.
>
> (8) Thus, there is a need for methods for efficiently extracting polysaccharides, alkylamides and chicoric acid from Echinacea plants, and for Echinacea extracts containing a high concentration of polysaccharides, alkylamides and/or chicoric acid. Further, there is a need for standardized Echinacea compositions containing a predetermined, desired amount of Echinacea extracts, including polysaccharide, alkylamide and/or chicoric acid extracts.

Gahler et al. additionally recognize the importance of selecting an Echinacea plant at a particular growth stage with the desired amounts of each analyte marker

compound (see col. 2, and columns 11-12 for example). Here, Gahler et al. provides detailed information of how to select Echinacea for optimum analyte concentration.

Gahler et al. clearly established that their extracts containing multiple marker compounds influenced immune system parameters such as IL-2 and TNF-α (*inter alia*) (see, for example, Figures 1-7 and 'Brief Description of the Drawings').

Gahler et al. did not specifically teach where Echinacea plants were harvested at different maturation stages and added to a cell culture to analyze immune products or translation products induced by Echinacea, or wherein a stage of maturation was selected which had a standardized concentration of 'about 3.26 to about 3.62% chicoric acid' and the highest observed level of immune-stimulatory product.

Letchamo et al. FACTORS AFFECTING ECHINACEA QUALITY; ASHS Press, Alexandria, VA (2002) teach that Echinacea is "…among the most frequently utilized medicinal herbs around the world" known for treating cold, cough and sore throats (p. 514). Letchamo et al. indicate that the pharmacological activity/chemical content of common markers (such as chicoric acid)of Echinacea extracts vary significantly upon choice of soil selection, disease, insect infestation, climate, country of origin and harvest time (see entire reference, especially p. 514, 515, Table 1, , Table 3, and Table 4). Letchamo et al. show that chicoric acid content as a percentage of dry matter varies

with regard to the country of origin, with Russian cultivars producing the highest yields of chicoric acid (Table 1). Letchamo et al. clearly demonstrate the nexus between harvest time and chicoric acid content: Table 4 reports the effects of flower developmental stages on chicoric acid content. Table 4 demonstrates that chicoric acid levels of *E. purpurea* at the early flower developmental stages produce the optimum amount of chicoric acid of 3.97% (see Table 4). The authors establish that they suggest that a 2.2% level of chicoric acid concentration for any standardized *E. purpurea* material (see p. 520 under Conclusions).

Echinacea was well known in the art for imparting immunological activity of macrophage cells according to Rininger et al. (2000). Specifically, Rininger et al. analyzed the production of TNF- α, IL-1α, IL-1βIL-6, IL-10 and nitric oxide from macrophage cells upon contact with several products of Echinacea including standardized extracts, whole plant material, juice and phenolic compounds (see entire reference, especially pages 4-10). Rininger et al. specifically stated that "Echinacea immunostimulatory activity varied significantly from lot-to-lot of raw material from the same supplier and may reflect growth conditions, time of harvest, milling and storage conditions" (p. 10).

Seidler – Lozykowska et al. (2003) analyzed the polyphenolic acid content of Echinacea purpurea during various growth stages of the plant (see Abstract and Material and Methods). Seidler – Lozykowska et al. determined that "the highest

concentration [of polyphenolic acids] was in the leave blades…during flowering stem formation in one year plants".

Dou et al. (2001- Abstract) taught assaying the level of chicoric acid in *Echinacea purpurea* plant material in different stages of growth (see Abstract). Dou et al. indicated that "The content of chicoric acid and yield were the highest in the overground part of *E. purpurea* before and after the bloomy stage" (Abstract).

The desirability of creating Echinacea extracts with increased immunopotentating activity, as well as increased levels of compounds such as chicoric acid was *well-documented in the art* (see cited references, especially Gahler et al.). It is deemed that the method claims of the Instant invention would have been well-within the purview of the ordinary artisan at the time the invention was made having the above-cited references before him or her. One of ordinary skill in the art would have had a reasonable expectation of success in choosing an Echinacea plant with 'the highest' amount of immuno-stimulatory' activity and at least some amount of chicoric acid because both immuno-stimulatory activity as well as chicoric acid were desired at the time the invention was made.

One of ordinary skill in the art would have been motivated to harvest Echinacea at different growth stages to ascertain its immunopotentiality on macrophage cells in order to assess immuno-function of the plant at different stages. Analyzing Echinacea

plants at different stages for particular immuno-potentiating compounds was known in the art according to Letchamo et al., Dou et al. and Seidler – Lozykowska et al. (2003), and Rininger et al. recognized that the variance of immunostimulatory activity was probably due to time of harvest *inter alia.* Thus, the ordinary artisan would have had a reasonable expectation that testing the Echinacea at varying growth stages for immunopotentating activity would have determined an optimum harvest time for the Echinacea.

It is clear from Rininger that what was investigated was immunostimulatory activity of Echinacea; via quantitatively assessing transcriptional products (cytokines) produced by RAW 264.7 cells in response to contact with Echinacea. Therefore, what was known in the art at the time the Invention was made was that Echinacea had immunostimulatory properties which were scientifically investigated. What was further known in the art was that Echinacea could be tested *in-vitro* for immunopotentating ability by measuring transcriptional products such as TGF and IL produced by RAW 264.7 cells. Therefore, it was well known at the time the Invention was made that amount of these transcriptional products produced by RAW 264.7 cells were proportional to the plant's immuno-potentiating activity (see Rininger et al., Figures 1 and 2 for example). Rininger et al. further specifically stated that that "Echinacea immunostimulatory activity varied significantly from lot-to-lot of raw material from the same supplier and may reflect growth conditions, time of harvest, milling and storage conditions" (p. 10). Again, analyzing Echinacea plants at different stages for particular

immuno-potentiating compounds and chicoric acid was well-known in the art . Therefore, the ordinary artisan would have been motivated to determine the optimal harvest window of Echinacea in order to obtain plant material which possessed maximum immunopotentating effects.

It is noted that the prior art does not specifically teach all of the claim limitations in one reference, hence, there is no 102 rejection. However, the invention as a whole is rendered obvious by the prior art references. Echinacea plants were well-known in the art at the time the invention was made and exhaustively studied for their medicinal effects. The claimed invention as a whole is obvious, and there is no individual step in any of the method claims which was not already known or made obvious by the prior art. That is, there is no novel step or idea in the method claims which makes it unobvious over the prior art references. According to the prior art references, as keenly pointed out in the previous Office actions, Echinacea plants were known to be studied at different maturation stages for marker compounds to select for optimum levels of compounds. Echinacea plants were also known to contain immunopotentating activity, and these activities were known to be studied and already determined to depend, in part, upon the harvesting time of the Echinacea. Harvesting Echinacea plants in the vegetative stage was known, due to the level of chicoric acid in the flowers at this stage of plant maturation. Additionally, Applicants' method for determining the level of immunopotentating activity, as well as marker immuno stimulatory products were known in the art at the time the invention was made. While no one, individual reference taught

all of these steps together; the ordinary artisan would have been motivated to perform the claimed method in order to optimize medicinal efficacy of an Echinacea extract and standardization would have been routine in manufacturing extracts with essentially uniform chemical constituents and hence, medicinal effectiveness: *"[a] person of ordinary skill is also a person of ordinary creativity, not an automaton* *KSR* 127S. Ct. at 1742 (emphasis added).

Letchamo et al. makes plainly evident that that selection of marker compounds such as chicoric acid present within the claimed range ('at least about 3.40%) were already known in the art through their routine experimentation to test chicoric acid levels in different maturation stages of Echinacea plant growth. Letchamo et al. further offer that chicoric acid should be standardized to at least 2.2%. Hence, while Applicants found that in their investigation, a particular plant of Echinacea purpurea at the vegetative stage contained 3.49% of chicoric acid and the maximum amount of immunopotentating activity; this data is not found to be significant and is not considered to be reproducible considering that Applicants did not disclose specific growing conditions of Echinacea; in other words, the chicoric acid content and immunopotentating activity will inevitably be different from plant to plant. It is expected that different maturation stages of Echinacea will produce optimum amounts of chicoric acid and optimum results when assayed for immunopotentating activity. As reiterated throughout this prosecution, it is evident that in Applicants' study, the level of chicoric acid was relatively consistent throughout maturation stages. Now, as claimed, the

method requires that a maturation stage is selected which comprises about 3.26 to 3.62% of chicoric acid and a highest level of immune-stimulatory product. The claims are deemed obvious and well-within the skill level of the ordinary artisan at the time the invention was made.

It is deemed that the method as claimed is an obvious variation of known methods to produce extracts of Echinacea having maximum amounts of chicoric acid and immuno-potentiating effects. To arrive at the claimed invention would have been well-within the purview of the ordinary artisan having the above- cited references before him or her, and could have been achieved through routine experimentation.

Claims 3, 6, 7 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gahler et al. (US 6,511,683) in view of Letchamo et al. FACTORS AFFECTING ECHINACEA QUALITY; ASHS Press, Alexandria, VA (2002), Seidler – Lozykowska et al. (2003), Dou et al. (2001 – Abstract), Rininger et al. (2000) and Sullivan et al. MEASUREMENT OF CYTOKINE SECRETION, INTRACELLULAR PROTEIN EXPRESSION, AND MRNA IN RESTING AND STIMULATED PERIPHERAL BLOOD MONONUCLEAR CELLS; Clinical and Diagnostic Laboratory Immunology; Nov. 2000, pp. 920-924.

The teachings of Gahler et al., Letchamo et al., Seidler-Lozykowska et al, Dou et al. and Rininger et al. were discussed *supra*. These references did not specifically teach whereby cytokine mRNA was a marker.

Detection of mRNA for cytokines was well-known at the time the invention was made. Sullivan et al. keenly outline procedures for quantifying mRNA for cytokine levels (see entire reference). Sullivan et al. state that cytokines may be masked in ELISA methods, and therefore other options for detection/quantification of cytokines are available (e.g., PCR, Northern Blot- see, e.g., p. 920, col.2).

One of ordinary skill in the art, having the knowledge that cytokines such as interleukins were advantageously measured in-vitro in response to Echinacea administration to test for immunopotentiating activity of said Echinacea would have been motivated to quantitate levels of mRNA cytokine in order to determine cytokine levels (such as interleukin levels). One of ordinary skill in the art would have had a reasonable expectation of performing such an assay as this assay was well-known in the art for detecting cytokine levels and as such, would have been a reasonable, conventional method for detecting cytokines in a sample.

Claims 3, 7 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gahler et al. (US 6,511,683) in view of Letchamo et al. FACTORS AFFECTING ECHINACEA QUALITY; ASHS Press, Alexandria, VA (2002), Seidler –

Lozykowska et al. (2003), Dou et al. (2001 – Abstract), Rininger et al. (2000) and Wyllie et al. (US 2003/0235890).

The teachings of Gahler et al. (US 6,511,683), Letchamo et al. FACTORS AFFECTING ECHINACEA QUALITY; ASHS Press, Alexandria, VA (2002), Seidler – Lozykowska et al. (2003), Dou et al. (2001 – Abstract) and Rininger et al. (2000) were discussed above. These references did not specifically teach the use of THP-01 cells as indicated by claims 23 and 25.

Wyllie et al. (US 2003/0235890) teach that RAW cells as well as THP-1 cells were both known for being immunopotentiating models (see [0306] for example).

One of ordinary skill in the art would have been motivated to substitute THP-1 cells for the RAW cells of Rininger et al. because THP-1 cells would have been a better model for human in-vivo immunopotentiating ability of Echinacea products.

Further, Applicant has not indicated, nor is there any data present which would indicate that the use of THP-1 cells would provide for any additional/unexpected benefit over RAW 264.7 cells. Each THP-1 (human) and RAW 264.7 (murine) are both macrophage/monocyte cells which express cytokines such as TGF a and Interleukins and both are known in the art to be used in-vitro to assess immunopotentiating activity of analyte compounds. Therefore one of ordinary skill in the art would have a

reasonable expectation that either cell would be suitable for quantitating immunopotentiating activity.

Claims 3, 6- 7 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gahler et al. (US 6,511,683) in view of Letchamo et al. FACTORS AFFECTING ECHINACEA QUALITY; ASHS Press, Alexandria, VA (2002), Seidler – Lozykowska et al. (2003), Dou et al. (2001 – Abstract), Rininger et al. (2000) Wyllie et al. (US 2003/0235890) and Sullivan et al. MEASUREMENT OF CYTOKINE SECRETION, INTRACELLULAR PROTEIN EXPRESSION, AND MRNA IN RESTING AND STIMULATED PERIPHERAL BLOOD MONONUCLEAR CELLS; Clinical and Diagnostic Laboratory Immunology; Nov. 2000, pp. 920-924.

It naturally follows from the previous rejections set-forth above, that all of the claims are properly rejected under the combination of the cited references for the same reasons set- forth above which may be incorperated herein.

Response to Argument

Applicants, in their pre-appeal request, argue that the combination of references do not "…teach or suggest both a standardized concentration of chicoric acid and the highest observed level of immune stimulatory product…when each of the four

references…is combined, one…is not led to the presently claimed method…" (p. 4, Remarks).

The prior art clearly recognizes the advantages of standardizing Echinacea for multiple marker compounds such as chicoric acid and immune-stimulating polysaccharides (Gahler et al., *Id.*) Although the prior art does not teach Applicants' claimed range of chicoric acid, the claimed range of 'about 3.26 to about 3.62' is obvious considering that chicoric acid levels within this range were already known in the art (Letchamo et al., *Id.*). Hence, Applicants' claimed method is deemed obvious from the teachings of the prior art. Applicants determined concentrations of chicoric acid in a plurality of maturation stages of Echinacea, to find that the level of chicoric acid remained relatively constant. Applicants' selection of maturation stage was thus primarily based upon finding the greatest level of immune stimulation via *in-vitro* assay. Applicants' methods as claimed are decidedly *a priori* obvious considering the teachings in the prior art which clearly indicate that marker compounds such as chicoric acid and polysaccharides (immunopotentiators) from Echinacea were highly sought-after compounds for standardizing Echinacea preparations such as extracts. Hence, selecting a maturation stage of Echinacea with optimal concentrations of a plurality of marker compounds such as chicoric acid and immunopotentating activity would have been *prima facie* obvious to one of ordinary skill in the art at the time the Invention was made in light of the references.

Testing for chicoric acid levels at different maturation stages was known in the art and immunopotentating activity had already been linked to harvest time. One of ordinary skill in the art would readily recognize from the prior art that Echinacea plants contain immuno potentiating activity; whether it be manifested from polysaccharides or alkylamides or some other endogenous phytochemical in Echinacea (e.g., see Fig. 5 of Gahler and Col. 4, lines 48-58) and that these phytochemicals would be present in the Echinacea plant.

The Echinacea plant chosen in Applicants' method claims will have immuno-potentiating activity, because the *plant contains all of the immuno-potentiating compounds*. The ordinary artisan, having the above-cited references before him or her, and thus possessing the knowledge that Echinacea comprises highly sought-after chicoric acid as well as immuno-potentiating activity would have been motivated to determine the optimal maturation stage of their Echinacea crop based upon cell assays on various harvest times to determine immunopotentating activity and chicoric acid content to maximize immunopotentating activity and chicoric acid content. One of ordinary skill wishing to do this, might be interested in selling the plant whole; e.g., as in a dry powder form. Again, the claim is directed toward selection of a particular maturation stage . The ordinary artisan, having the above-cited references before him or her would have had a reasonable expectation of success in using the claimed invention to ascertain their own optimal maturation stage seeing that 1) Echinacea was

known to be tested at various levels for chicoric acid content and 2) that Echinacea was known to have immuno potentiating activity and that this immuno potentiating activity was known to be tested via monocyte cell culture for cytokines such as IL-1 (see Rininger).

The techniques found in the claims; e.g., assaying for chicoric acid levels and cell assays to determine amounts of immuno-products produced from cell assays with regard to Echinacea were well-known in the art. Optimizing harvest times based upon chicoric acid content was well-known in the art and Rininger specifically suggested that immunopotentating activity was affected by harvest time. Hence, having the knowledge of the prior art, one of ordinary skill in the art, wishing to obtain an optimal harvest time of Echinacea would have been motivated to perform the claimed method steps. And to reiterate from above, although each method step was not explicitly taught in one prior art reference; considering the knowledge pertaining to Echinacea as set forth keenly *supra*, it is determined that the claimed method steps could have been achieved through routine optimization of prior art methods for determining optimal harvest time of Echinacea. Hence, respectively, in the opinion of the Examiner, there is nothing within the claimed invention that rises above the conventional knowledge concerning harvesting Echinacea plants for marker compounds which would be rendered patentable.

"Common sense teaches … that familiar items may have obvious uses beyond their primary purposes, and in many cases a person or ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle." *KSR*, 127 S.Ct. at 1742. *See also, Muniauction, Inc. v. Thomson Corp.*, ___ F.3d ___, 2008 WL 2717689, at *6-*10 (Fed. Cir. July 14, 2008); *Leapfrog Enterprises, Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1160-63 (Fed. Cir. 2007).

The Supreme court has acknowledged that:

> When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. **If a person of ordinary skill can implement a predictable varition..103 likely bars its patentability**…if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond that person's skill. A court must ask whether the improvement is more than the predictable use of prior-art elements according to their established functions…

…**the combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results** (see *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385 U.S. 2007) emphasis added.

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia Leith whose telephone number is (571) 272-0968. The examiner can normally be reached on Monday - Friday 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terry McKelvey can be reached on (571) 272-0775. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Patricia Leith
Primary Examiner
Art Unit 1655

/Patricia Leith/
Primary Examiner, Art Unit 1655